

## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 3.82504/001	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/GB2004/004952	International filing date (day/month/year) 24.11.2004	Priority date (day/month/year) 24.11.2003	
International Patent Classification (IPC) or national classification and IPC F42D5/04, F41H5/04, A62D5/00, E04H9/00, G21F1/00			
Applicant OZTECH PTY LTD et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 2 sheets, as follows:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the opinion</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input checked="" type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>			
Date of submission of the demand 26.09.2005	Date of completion of this report 22.02.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Puetz, C Telephone No. +31 70 340-3759 		

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
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**Box No. I Basis of the report**

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements\* of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-30 as originally filed

**Claims, Numbers**

1-11 received on 26.10.2005 with letter of 26.10.2005

**Drawings, Sheets**

1/11-11/11 as originally filed

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes:	Claims	1-11
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-11
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-11
	No:	Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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**Box No. VI Certain documents cited**

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**1. Certain published documents (Rule 70.10)**

**and / or**

**2. Non-written disclosures (Rule 70.9)**

**see separate sheet**

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**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Reference is made to the following documents:**

- D1: US-A-3 398 007**
- D2: GB-A-2 100 845**
- D3: US-A-3 818 234**
- D4: US-A-5 394 786**

**2. Novelty and inventive step**

The present application meets the requirements of Article 33(1) PCT, since the subject-matter of claims 1-11 fulfills the criteria of the PCT with respect to novelty and inventive step.

**2.1. Claims 1-4,8,9,11:**

- a) The document **D2** is regarded as being the closest prior art to the subject-matter of claim 1. Document **D2** describes (whole document) an explosion-proof protective sheathing containing an aqueous gel containing perlite.

The subject-matter of claim 1 differs from this known **D2** in that the protecting methods use water gels formed from gelatin and water (concentration of gelatin in said water gel: 3 to 40% wt), whereas in **D2** perlite based water gel is used.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

In order to make an assessment of inventive step vis-à-vis the prior art **D2**, it has to be determined which technical problem is solved by the distinguishing features defined above.

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In the present case it not clear that any technical effect arises from the distinguishing features. As the application has no examples allowing a comparison with the closest prior art **D2**, the problem solved by the present application can only be regarded as the provision of further pressure wave protecting methods. However, since neither in **D2** nor in **D1** or **D3** there is an incentive to use gelatin based water gels in the protecting methods, such as disclosed in claim 1, an inventive step may be acknowledged (Article 33(3) PCT).

- b) In view of documents **D1-D4** claims 2-4,8,9,11 are novel and inventive.

**2.2. Claims 5-7:**

- a) The document **D4** is regarded as being the closest prior art to the subject-matter of claim 5. Document **D4** describes (column 7, line 17 - column 8, line 36; column 11, line 61 - column 13, line 19) an acoustic/shock wave attenuating assembly formed by a flowable attenuating medium exhibiting aqueous foam characteristics. The pressure attenuating medium may be e.g. a gel.

The subject-matter of claim 5 differs from that known **D4** in that water gels formed from gelatin and water (concentration of gelatin in said water gel: 3 to 40% wt) are used, whereas in **D4** an unspecified gel is used.

The subject-matter of claim 5 is therefore new (Article 33(2) PCT).

In order to make an assessment of inventive step vis-à-vis the prior art **D4**, it has to be determined which technical problem is solved by the distinguishing features defined above.

In the present case it not clear that any technical effect arises from the distinguishing features. As the application has no examples allowing a comparison with the closest prior art **D4**, the problem solved by the present application can only be regarded as the provision of further barriers. However, since neither in **D4** nor in **D1-D3** there is an incentive to use gelatin based water gels in a barrier, such as disclosed in claim 5, an inventive step may be acknowledged (Article 33(3) PCT).

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- b) Claims 6 and 7 are dependent on claim 5 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

**2.3. Claim 10:**

The document **D3** is regarded as being the closest prior art to the subject-matter of claim 10. Document **D3** describes (claims) a radiation shield comprising a wall segment having a hollow section which is filled with water and a crosslinked polymer of a water soluble vinyl monomer in a sufficient amount to gel.

The subject-matter of claim 10 differs from this known **D3** in that water gels formed from gelatin and water (concentration of gelatin in said water gel: 3 to 40% wt) are used, whereas in **D3** water gel comprises a crosslinked polymer.

The subject-matter of claim 10 is therefore new (Article 33(2) PCT).

In order to make an assessment of inventive step vis-à-vis the prior art **D3**, it has to be determined which technical problem is solved by the distinguishing features defined above.

In the present case it not clear that any technical effect arises from the distinguishing features. As the application has no examples allowing a comparison with the closest prior art **D3**, the problem solved by the present application can only be regarded as the provision of further water gels for use to protect against chemical, biological or radiological contamination. However, since neither in **D3** nor in **D1** or **D2** there is an incentive to use gelatin based water gels in protecting methods, such as disclosed in claim 10, an inventive step may be acknowledged (Article 33(3) PCT).

**Re Item VI**

**Certain documents cited**

**Certain published documents**

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International application No.

**PCT/GB2004/004952**

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date ( <i>valid claim</i> ) (day/month/year)
WO2004/044520	(27/05/2004)	(12/11/2003)	(12/11/2002)

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Claims

1. A method for protecting an entity from the effects of an explosion or from the effects of contact with a projectile comprising covering at least a part of said entity in a barrier comprising a water gel formed from gelatin and water wherein the concentration of gelatin in said water gel is 3 to 40% wt.
- 10 2. A method as claimed in claim 1 wherein the concentration of gelatin in said water gel is 5 to 25% wt.
- 15 3. A method as claimed in claim 1 to 2 to protect an entity from the effects of an explosion.
4. A method as claimed in any one of claims 1 to 3 to mitigate the effects of contact with a projectile.
- 20 5. A barrier comprising a water gel layer in which said water gel comprises gelatin and water wherein the concentration of gelatin in said water gel is 3 to 40% wt and a polymer layer, a metal layer, a ceramic layer, a fabric layer, a fibreglass layer, a dilatant layer or  
25 mixtures of such layers.
6. A barrier as claimed in claim 5 comprising a dilatant layer containing a polyethylene oxide layer.
- 30 7. A barrier as claimed in claim 5 to 6 comprising a layer of fire retardant material, a layer of material impervious to chemicals, radioactivity or biological agents.
- 35 8. A barrier to protect against the effects of an explosion or the effects of contact with a projectile

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comprising gelatin and water, wherein the concentration of gelatin in the water is at least 3 to 40% w/w.

9. Use of a water gel formed from gelatin and water  
5 wherein the concentration of gelatin in said water gel  
is 3 to 40% wt in pressure impulse mitigation.

10. Use of a water gel formed from gelatin and water  
wherein the concentration of gelatin in said water gel  
10 is 3 to 40% wt to protect entities against chemical,  
biological or radiological contamination.

11. A ship or vehicle comprising a barrier as claimed  
in claim 5 to 8.